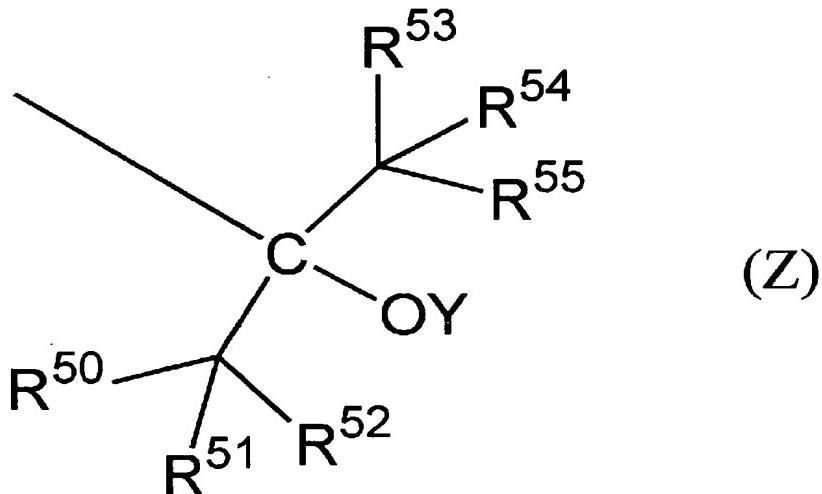


**What is claimed is:**

1. A positive resist composition comprising:
  - (A) a resin which comprises a repeating unit having at least two groups represented by the following general formula (Z) and at least one kind of repeating units selected from repeating units represented by the following general formulae (II) to (VI), the resin increasing the solubility in an alkaline developing solution by the action of an acid; and
  - (B) at least one compound which generates an acid by the action of actinic rays or a radiation:

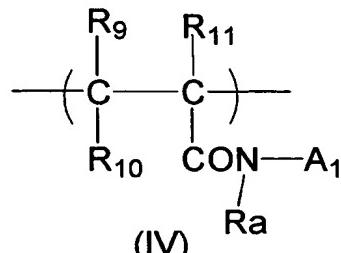
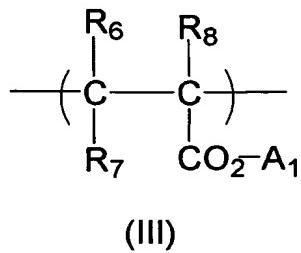
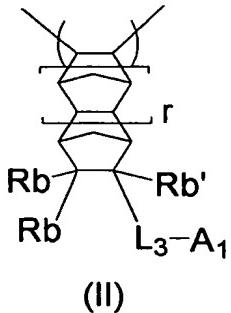


in general formula (Z),

R<sup>50</sup> to R<sup>55</sup> each independently represent a hydrogen atom, a fluorine atom, or an alkyl group, provided that at least one of R<sup>50</sup> to R<sup>55</sup> is either a fluorine atom or an alkyl group in which at least one of the hydrogen atoms has been replaced by a fluorine

atom, and

Y's each independently represent a hydrogen atom or an organic group;



in general formula (II),

Rb and Rb' each independently represent a hydrogen atom, a halogen atom, or an organic group,

L<sub>3</sub> represents a single bond or a bivalent connecting group,

A<sub>1</sub> represents a partial structure represented by the following general formula (A<sub>1</sub>), and

r represents 0 or 1;

in general formula (III),

R<sub>6</sub> to R<sub>8</sub> each independently represent a hydrogen atom, a fluorine atom, a chlorine atom, a cyano group, or an alkyl group in which at least one of the hydrogen atoms has been replaced by a fluorine atom, provided that at least one of R<sub>6</sub> to R<sub>8</sub> is not a hydrogen atom, and

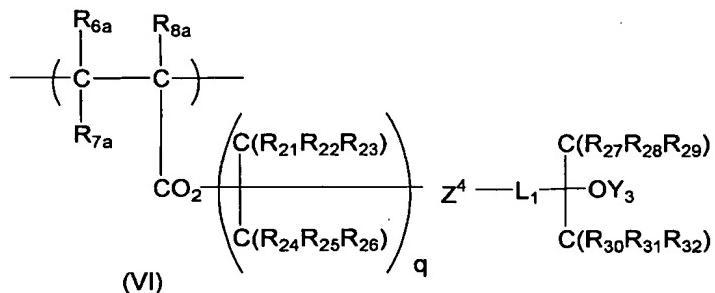
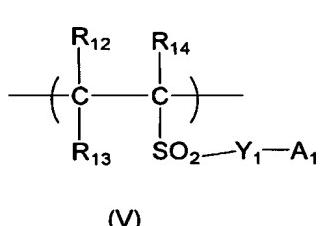
A<sub>1</sub> represents a partial structure represented by the following general formula (A<sub>1</sub>);

in general formula (IV),

R<sub>9</sub> to R<sub>11</sub> each independently represent a hydrogen atom, a fluorine

atom, a chlorine atom, a cyano group, or an alkyl group in which at least one of the hydrogen atoms has been replaced by a fluorine atom, provided that at least one of R<sub>9</sub> to R<sub>11</sub> is not a hydrogen atom,

R<sub>a</sub> represents a hydrogen atom, an alkyl group, a cycloalkyl group, an aryl group, or an aralkyl group, and A<sub>1</sub> represents a partial structure represented by the following general formula (A<sub>1</sub>) ;



in general formula (V),

R<sub>12</sub> to R<sub>14</sub> each independently represent a hydrogen atom, a fluorine atom, a chlorine atom, a cyano group, or an alkyl group in which at least one of the hydrogen atoms has been replaced by a fluorine atom,

Y<sub>1</sub> represents a single bond, -O-, or -N(R<sub>a</sub>)-, wherein R<sub>a</sub> represents a hydrogen atom, an alkyl group, a cycloalkyl group, an aryl group, or an aralkyl group, and

A<sub>1</sub> represents a partial structure represented by the following general formula (A<sub>1</sub>) ;

in general formula (VI),

R<sub>6a</sub> to R<sub>8a</sub> each independently represent a hydrogen atom, a fluorine

atom, a chlorine atom, a cyano group, or an alkyl group in which at least one of the hydrogen atoms has been replaced by a fluorine atom, provided that at least one of R<sub>6a</sub> to R<sub>8a</sub> is not a hydrogen atom,

R<sub>21</sub> to R<sub>26</sub> each independently represent a hydrogen atom, a fluorine atom, or an alkyl group, provided that at least one of R<sub>21</sub> to R<sub>26</sub> is a fluorine atom,

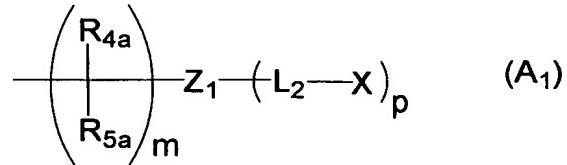
R<sub>27</sub> to R<sub>32</sub> each independently represent a hydrogen atom, a fluorine atom, or an alkyl group, provided that at least one of R<sub>27</sub> to R<sub>32</sub> is a fluorine atom,

Z<sub>4</sub> represents a phenylene group, a cyclohexylene group, an adamantane residue, or a norbornane residue,

Y<sub>3</sub> represents a hydrogen atom or an organic group,

L<sub>1</sub> represents a single bond or a bivalent connecting group,  
and

q represents 0 or 1; and



in general formula (A<sub>1</sub>),

R<sub>4a</sub> and R<sub>5a</sub> each independently represent an alkyl group,  
Z<sub>1</sub> represents an alicyclic hydrocarbon group having a valence  
of p+1,

L<sub>2</sub> represents a single bond or a bivalent connecting group,  
X represents a hydroxy group, a cyano group, an alkoxy group,

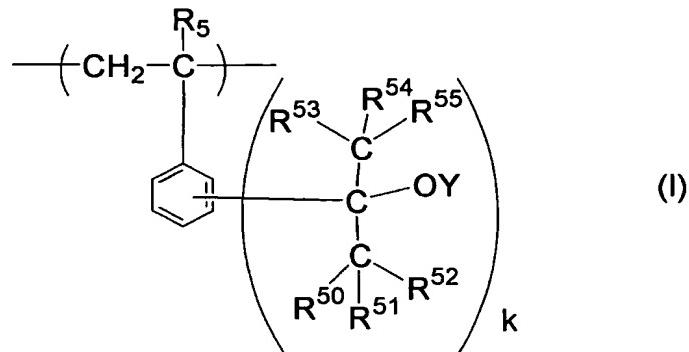
or an alkyl group, provided that at least one of the X's is not an alkyl group,

when two or more L<sub>2</sub>'s and two or more X's are present in the partial structure, the L<sub>2</sub>'s and the X's each may be the same or different,

m represents 0 or 1, and

p represents an integer of 1 to 4.

2. The positive resist composition of claim 1, wherein the repeating units having at least two groups represented by general formula (Z) are repeating units represented by the following general formula (I):



in general formula (I),

R<sub>5</sub> represents a hydrogen atom, a halogen atom, a cyano group, or an alkyl group,

R<sup>50</sup>'s to R<sup>55</sup>'s each independently represent a hydrogen atom, a fluorine atom, or an alkyl group, provided that at least one of R<sup>50</sup> to R<sup>55</sup> is either a fluorine atom or an alkyl group in which at least one of the hydrogen atoms has been replaced

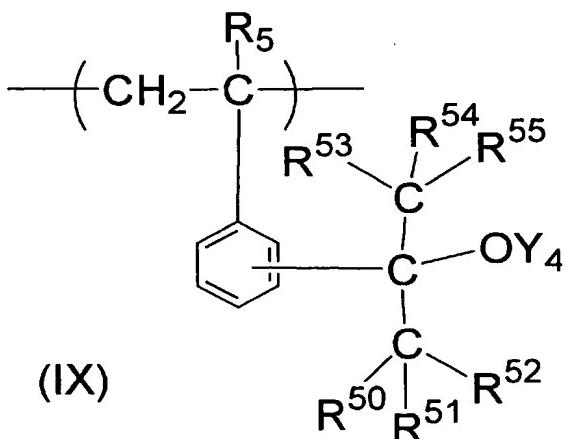
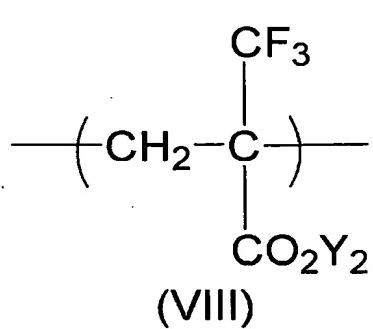
by a fluorine atom,

Y's each independently represent a hydrogen atom or an organic group, and

k represents an integer of  $2 \leq k \leq 5$ .

3. The positive resist composition of claim 1, wherein at least one X in the formula (A<sub>1</sub>) is a group having a hydroxy group.

4. The positive resist composition of claim 1, wherein the resin (A) further contains at least one of repeating units represented by the following formula (VIII) and repeating units represented by the following formula (IX):



in general formula (VIII),

Y<sub>2</sub> represents a hydrogen atom or an organic group; and

in general formula (IX),

R<sub>5</sub> represents a hydrogen atom, a halogen atom, a cyano group, or an alkyl group,

$R^{50}$  to  $R^{55}$  each independently represent a hydrogen atom, a fluorine atom, or an alkyl group, provided that at least one of  $R^{50}$  to  $R^{55}$  is a fluorine atom or an alkyl group in which at least one of the hydrogen atoms has been replaced by a fluorine atom, and

$Y_4$  represents a hydrogen atom or an organic group.

5. The positive resist composition as described in claim 1, wherein  $Z_1$  in the formula (A<sub>1</sub>) is an adamantyl group or a norbornane residue.

6. The positive resist composition as described in claim 2 wherein k in formula (I) is 2.

7. The positive resist composition as described in claim 1 wherein  $Rb'$  in formula (II),  $R_8$  in formula (III), or  $R_{11}$  in formula (IV) is a trifluoromethyl group.

8. The positive resist composition as described in claim 1 which further contains (X) a non-polymeric dissolution inhibitor.

9. The positive resist composition as described in claim 1 above wherein the compound (B) comprises (B1) at least one compound which generates an organic sulfonic acid by the

action of actinic rays or a radiation.

10. The positive resist composition as described in claim 9 above wherein the compound (B1) comprises at least one compound which generates an organic sulfonic acid containing at least one fluorine atom by the action of actinic rays or a radiation and at least one compound which generates an organic sulfonic acid containing no fluorine atom by the action of actinic rays or a radiation.

11. The positive resist composition as described in claim 9 above wherein the compound (B) further contains (B2) a compound which generates a carboxylic acid by the action of actinic rays or a radiation.

12. The positive resist composition as described in claim 1 above which further contains (E) an organic basic compound.

13. The positive resist composition as described in claim 1 above which further contains (D) a surfactant.

14. A method of forming a resist pattern comprising: coating the positive resist composition as described in claim 1 on a substrate;

irradiating a resultant coating with actinic rays or  
a radiation; and

developing the resultant coating.